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# Broselow Tape Education

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### Recommended Citation

Tinney, Marchel, "Broselow Tape Education" (2007). *Graduate Research Projects*. 40.  
<https://knowledge.e.southern.edu/gradnursing/40>

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Graduate Project Report  
Broselow Tape Education

Southern Adventist University  
School of Nursing

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July 17, 2007

## Introduction

Every year Memorial North Park Hospital requires nurses to attend education classes. Included in these classes are updated policies and procedures, up to date standards of care, and the ability to practice skills necessary for quality care. One of the skills required is the ability to efficiently and effectively participate in a Pediatric code. All the nurses in the classes are required to be certified in Advanced Cardiac Life Support (ACLS) and Pediatric Advanced Life Support (PALS) training which requires yearly or bi-yearly updates. The nurses included in this project worked in the Emergency Department (ED) and the surgery center. These are the only units in the hospital required to care for children. Therefore the Broselow education classes were limited to those areas. The hospital included in its education day a section pertaining to the Broselow Tape which is a tool designed by Jim Broselow, MD to help alleviate the anxiety in a pediatric code situation there for eliminating medication and equipment errors.

## Significance of the Problem

In North Park hospital the pediatric population accounts for 23% of the total of emergency room patients and the surgery center sees 12% children per year. The nurses when asked had the most anxiety about pediatric patients and were uncomfortable treating them in emergency situations.

Early in the 1980's Dr. Jim Broselow an Emergency room Physician in Hickory, North Carolina recognized the anxiety of pediatric emergencies and developed a tool to help relieve the staff of this anxiety. He developed a tape which was named after the creator, which based on standardized height and weight values of pediatric patients from

the National Center for Health Statistics gives standardized medication doses and equipment sizes for children under the age of twelve or smaller than the tape.

The terror and anxiety from pediatric emergency situations is common and a general problem. Studies show the highest rate of medication errors occur in the emergency room and specifically pediatrics (Kaushal, 2001). In a study by Kushal (2001) 10,778 medication orders were reviewed and of those 616 errors were made. The potential adverse drug events was 115 and the rate of adverse drug events was 26, this number was compared to a study of adult patients which showed a 3% higher rate in the pediatric population. "Errors may occur in any component of a dosage equation. Health care organizations should implement procedures to reduce the risk for errors resulting from the use of dosage equations." (Lesar, 1998). According to Lesar (1998) decimal points accounted for the highest rate of error at 59.5% Communication is key when the anxiety level rises. Jaffe (2007) states "Medication errors cause substantial harm to patients, and considerable costs to healthcare systems."

Dr. Broselow identified and developed an effective tool to eliminate the need for drug calculations and reduce the human error component in these highly emotional and stressful situations. His tool gives common emergency medications and life support equipment sizes and color codes them to make the decisions easy. The patients become a color which coincides with the crash cart which makes the nurses' job much easier

### Project Description

After obtaining permission from SAU IRB and the directors of North Park's emergency room and surgery center I presented a short education session to the registered nurses. The nurses were first asked if they knew what the broselow tape was and where

to find it in their department. All of the Emergency department nurses were familiar with the tape because the ED has a specific pediatric room with a pediatric crash cart and a copy of the tape which is encased in plastic and readily available. The surgery department nurses were not as familiar with the tape and some did not know where it was located. Even though they are required to have PALS certification they do not have “walk in” emergencies and do not use their pediatric crash cart often.

The nurses were given a ten question pre-test which was followed by a power point presentation obtained from Duke University, and hands on time with the Broselow tape. After the information the nurses were given a post-test which was identical to the pre-test. The format of testing was intended to illustrate the participants learning from the presentation. The pre-tests were collected after the class for my needs and data collection and the post-tests were added to the nurses file by the directors to fulfill the hospitals education requirements. The pre-test did not have identifying data so the confidentiality of the nurses was secure. The information was not necessary since the post-test results were all the same. Every one who attended the class, took the pre-test and post-test made a score of 100% on the post-test.

### Project Outcomes

The Broselow tape class was given to nurses during the required education day at the hospital which was multiple sessions over the course of six months. The average class size was five people. Only the nurses in surgery were given the pre and post tests. All the other information was the same for both units.

The pre-test scores ranged from 30% to 90% with a mean score of 60%. The post test scores were 100%. Every one passed the hands on requirement which consisted of

placing a baby doll or my five year old child on the tape and accurately reading the doses or equipment sizes for the patient. Scenarios were different for everyone and all participants left with a greater understanding of the tape and its ability to alleviate stress in a life and death situation.

All the nurses stated a greater confidence level after the class and were appreciative of the time to familiarize themselves with the information on the tape. Even the ED nurses who have seen the tape multiple times didn't know how user friendly the tape was until the class.

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